Instructions for creating PostgreSQL FIADB database – March 30, 2018

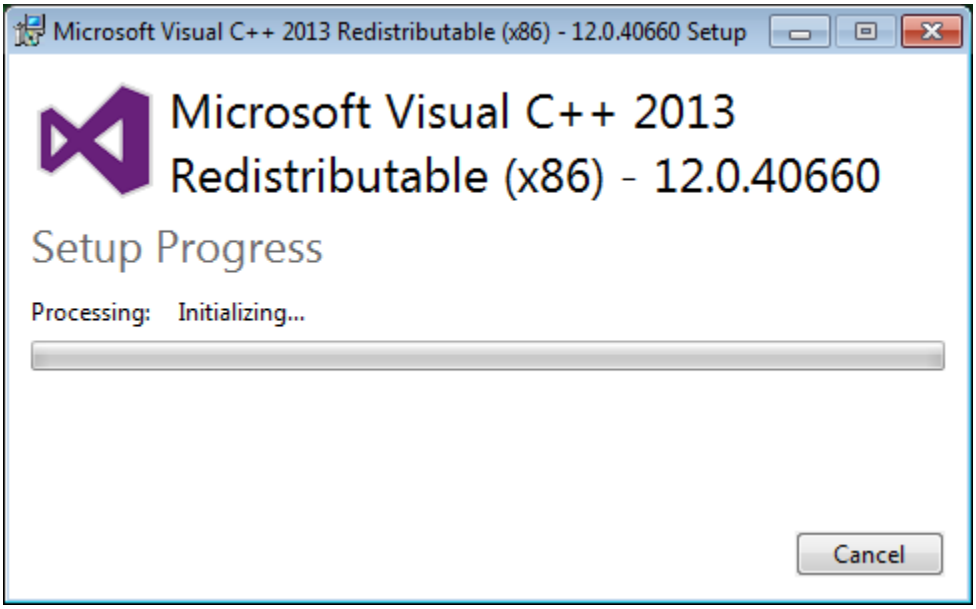
Chapter 1: Installing PostgreSQL

Get a copy of the FIADB_PG folder from the instructor and put it on your PC.

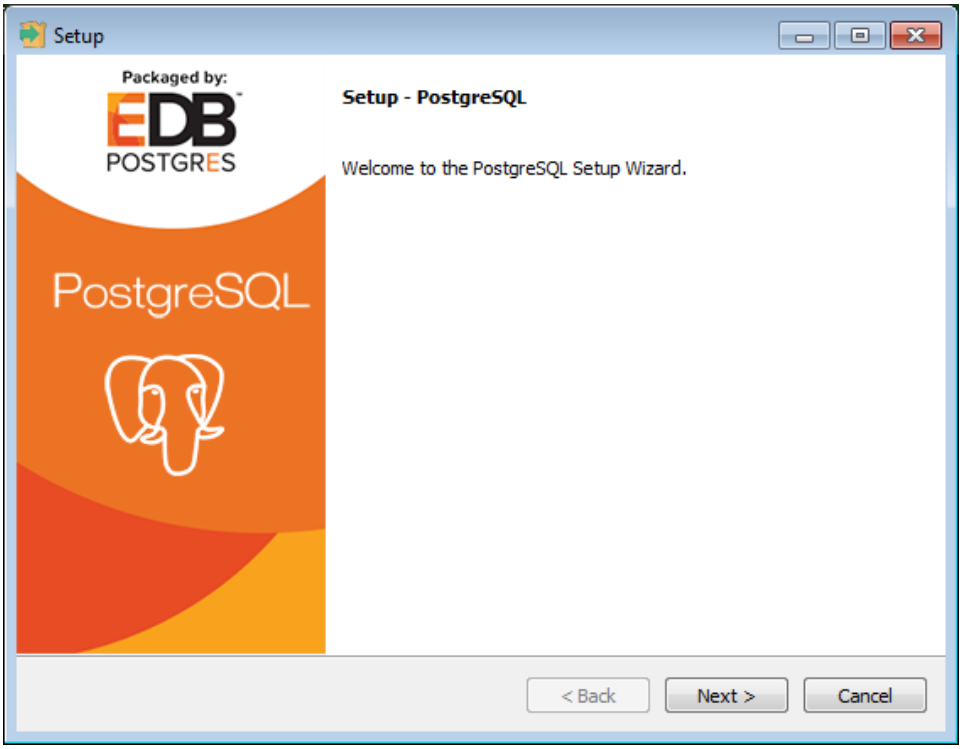
Go to https://www.postgresql.org/download/windows/
Click on link to download the installer which takes you to this page
https://www.enterprisedb.com/downloads/postgres-postgresql-downloads
Select the version PostgreSQL 10.2
Select the operating system. For my laptop I selected "Windows x86-64"
Locate the downloaded file "postgresql-10.2-1-windows-x64.exe"

a. Non-forest service computers: double-click on file "postgresql-10.2-1-windows-x64.exe"
b. Forest Service computers: right-click on file "postgresql-10.2-1-windows-x64.exe" and click on "Run Elevated" In the text area for justification enter "research".

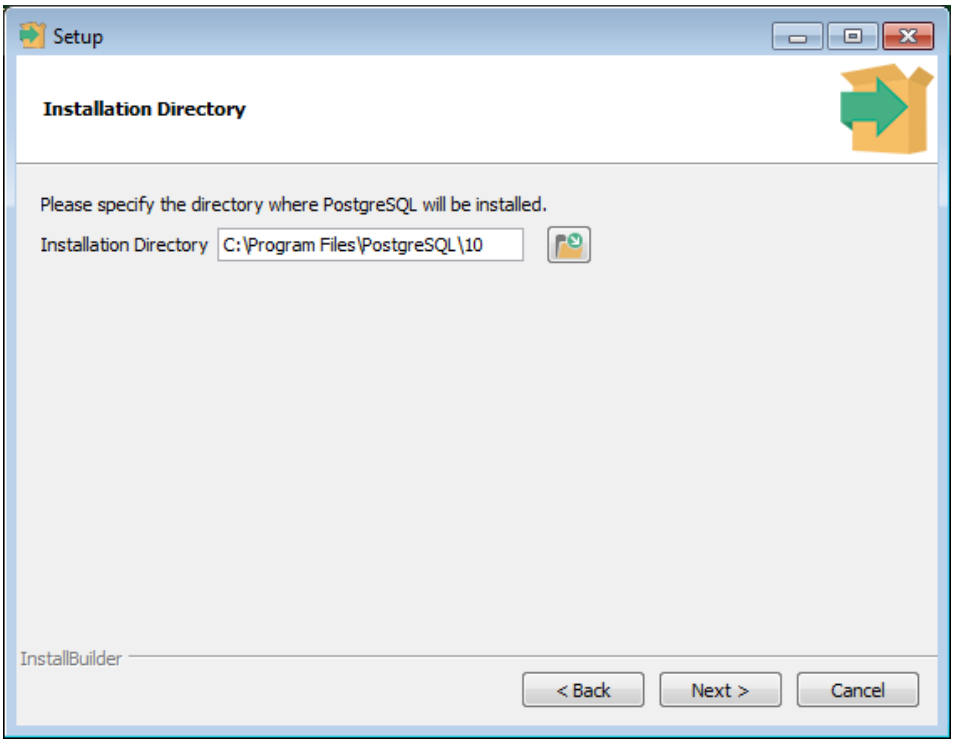
This window will appear. It should take about 3 minutes to complete.



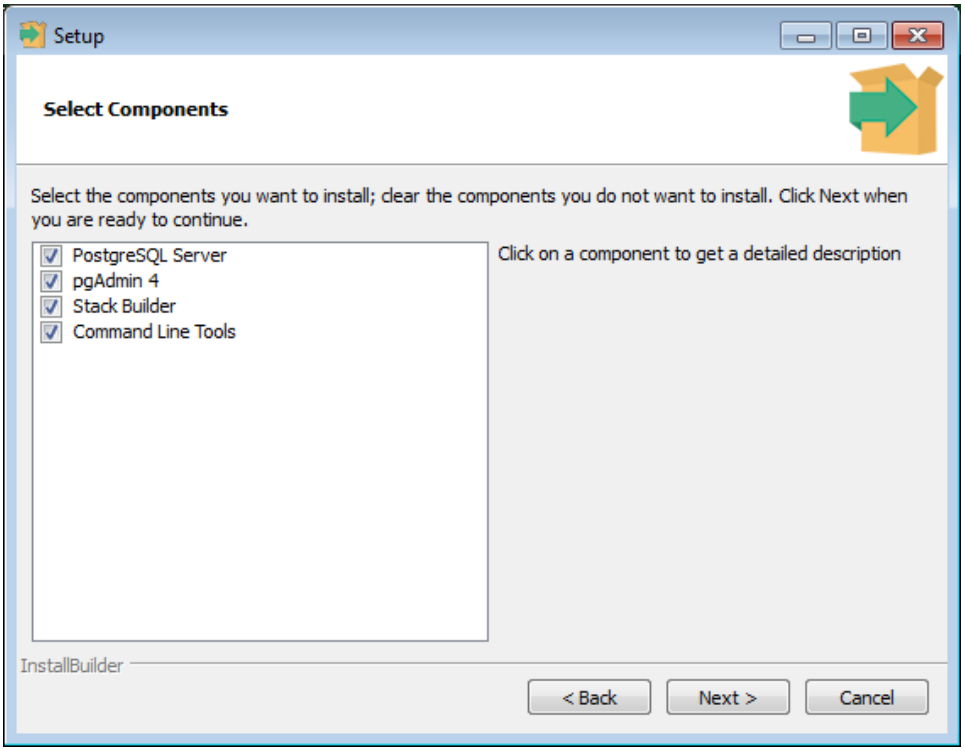
And then this window will appear



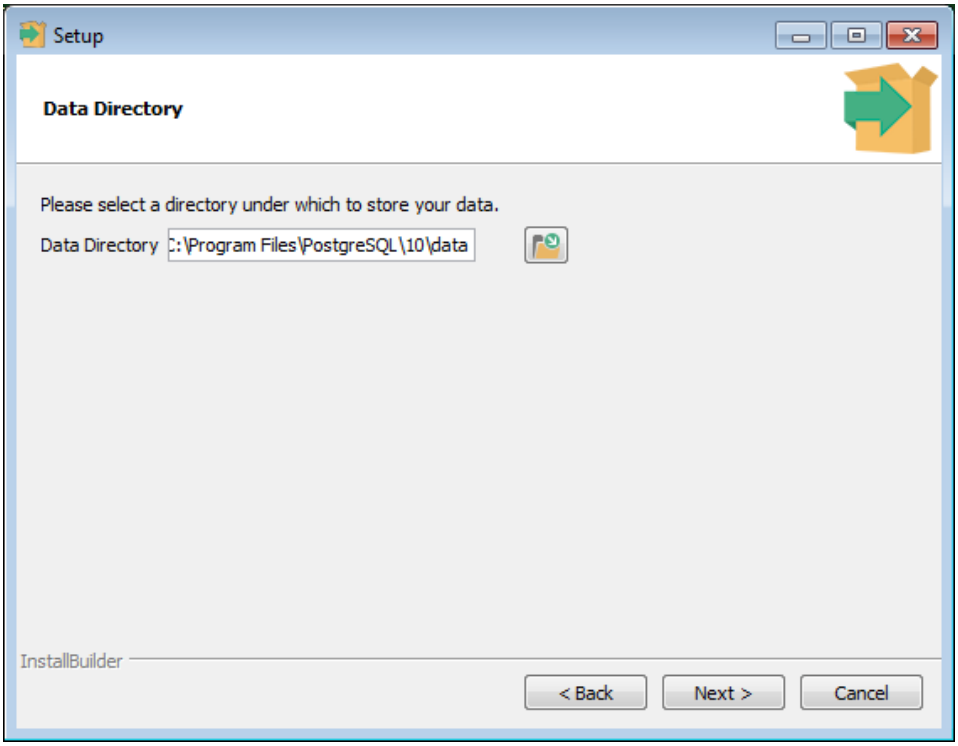
Click on “Next” button.



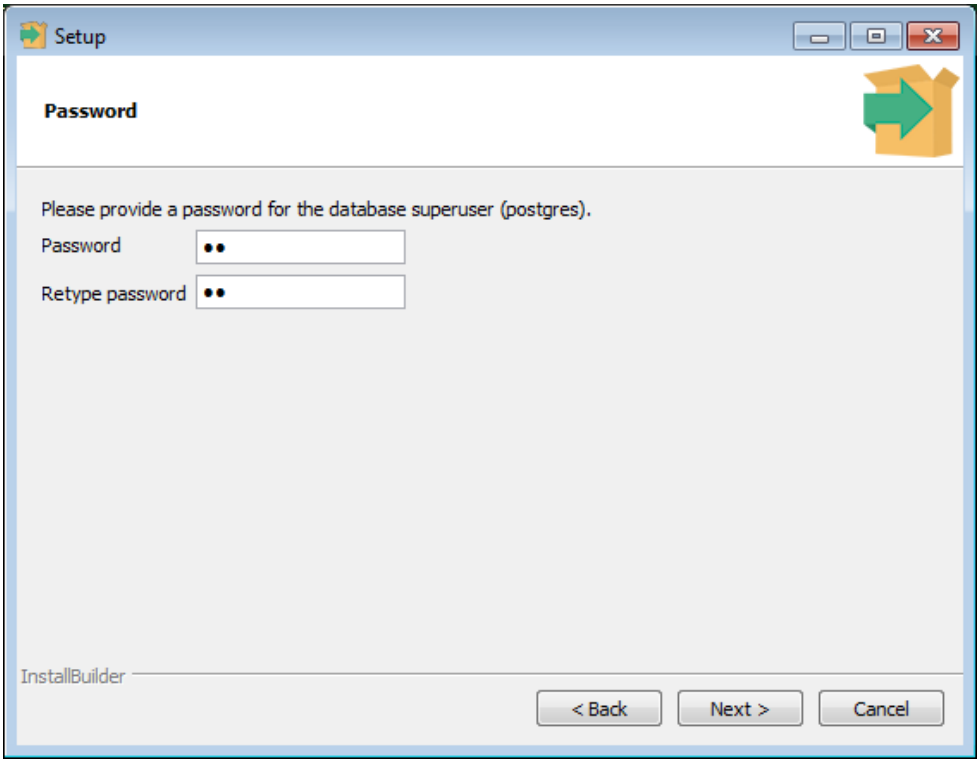
Click on the “Next” button.



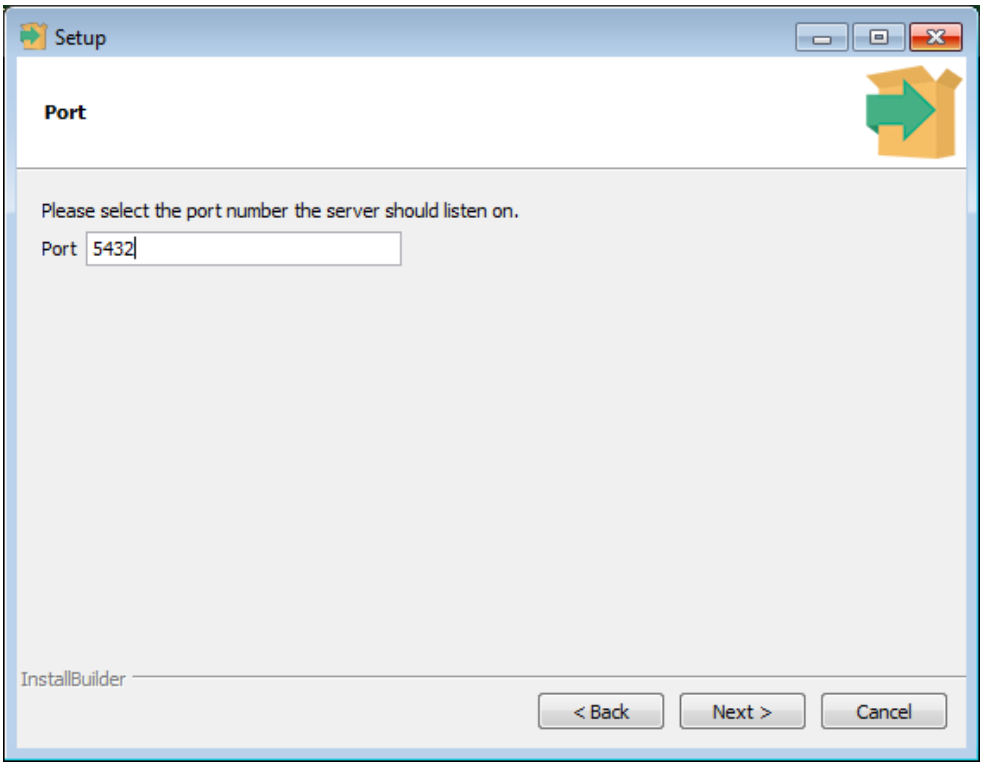
Click on the “Next” button.



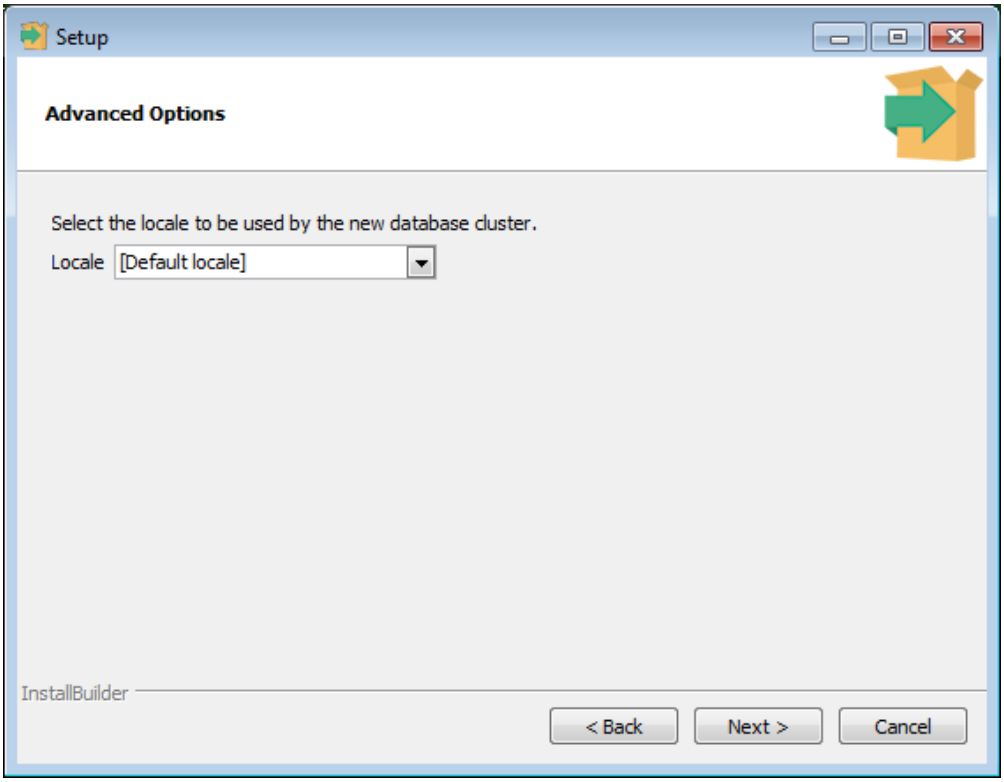
Click on “Next” button.



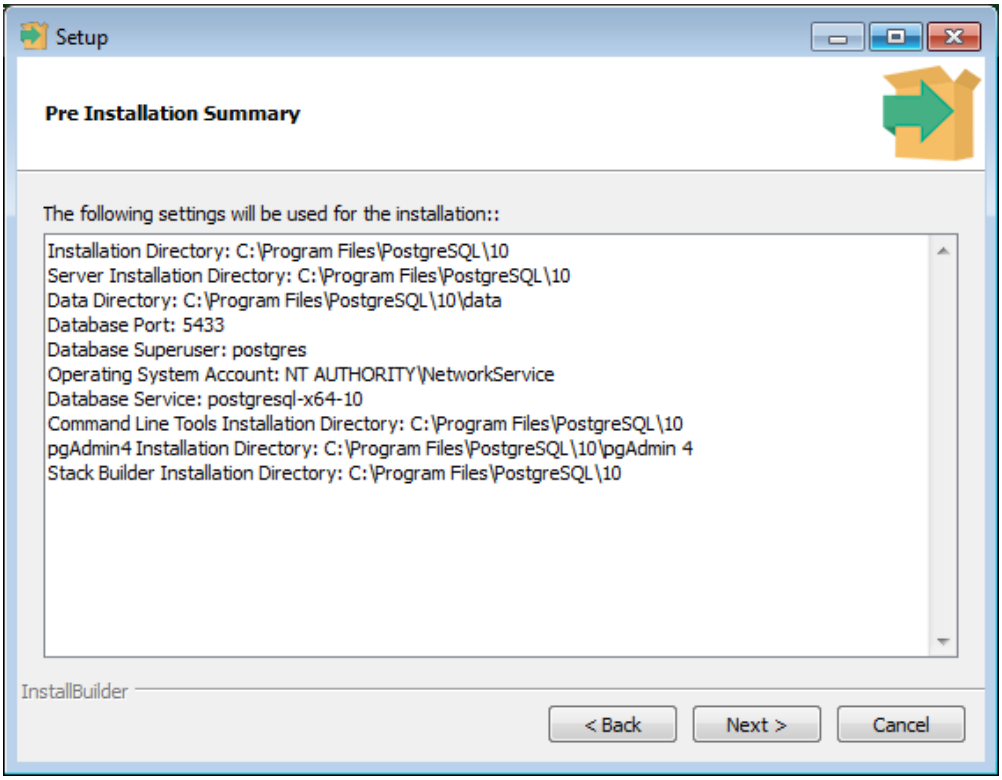
Enter password for superuser (username=”postgres”, password=”pw”) and click “Next” button.



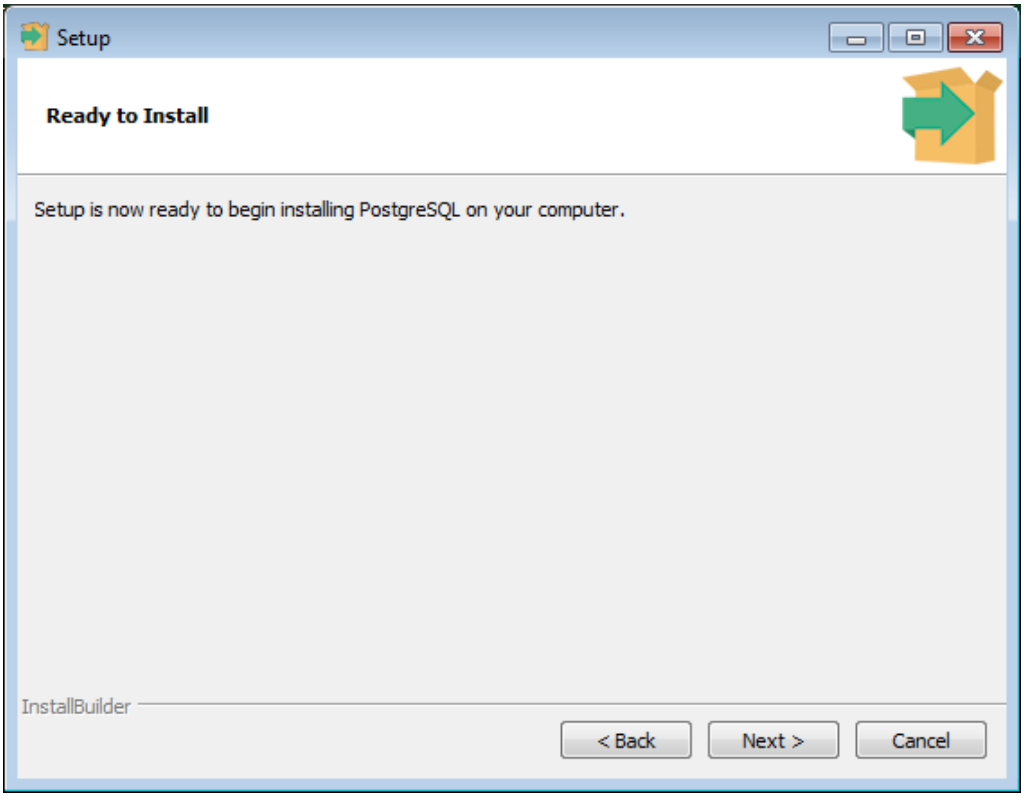
Leave the port number set at “5432” and click “Next” button.



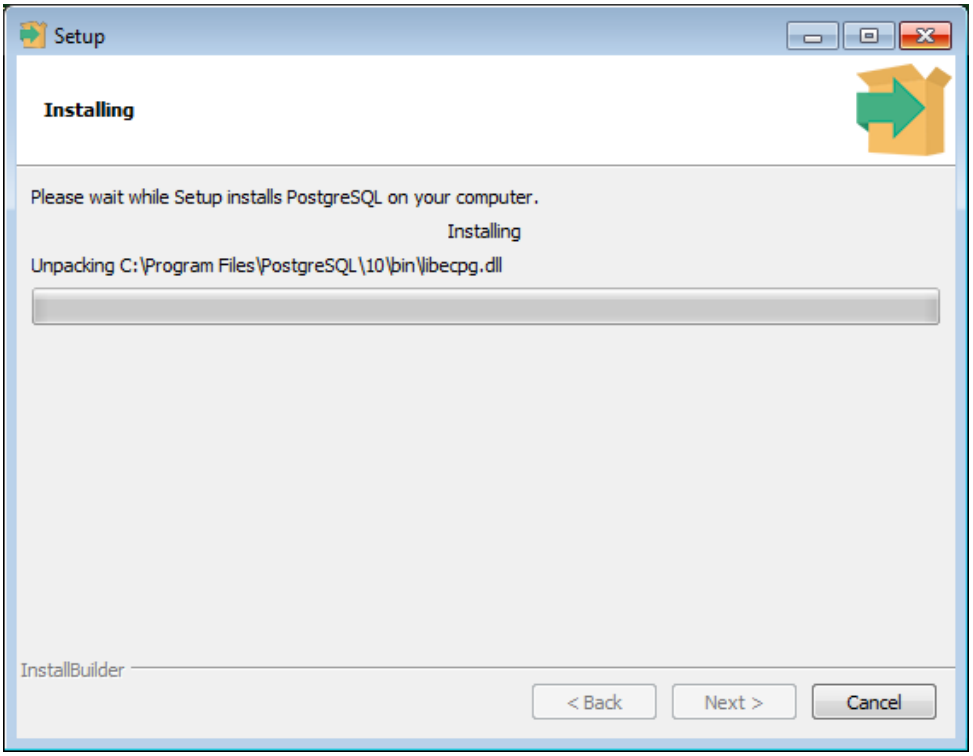
Click the “Next” button.



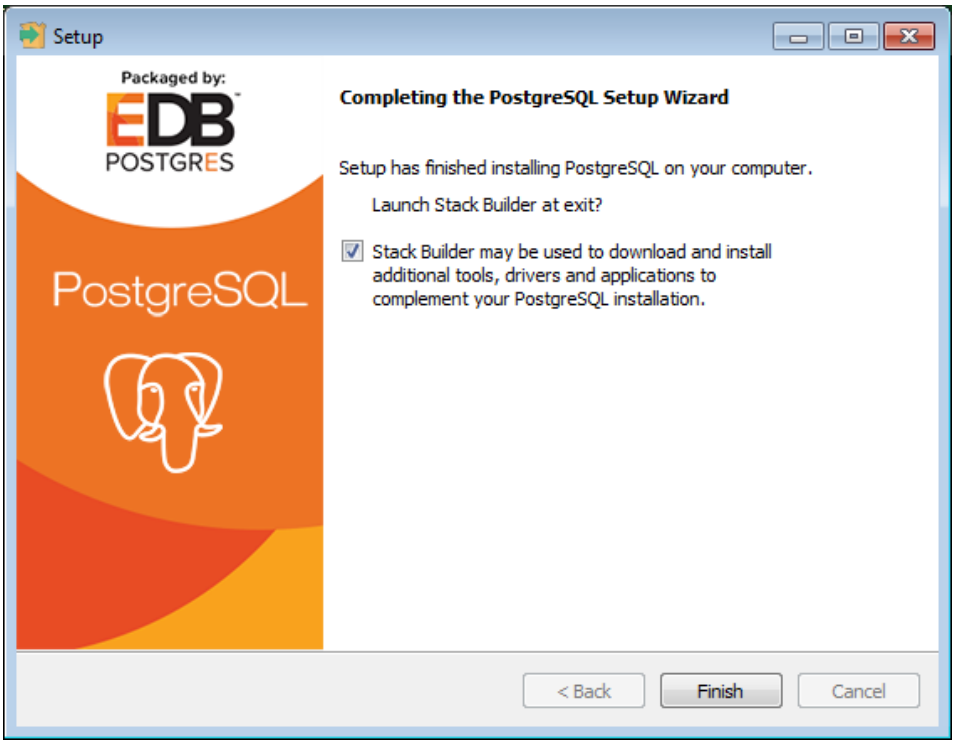
Click the “Next” button.



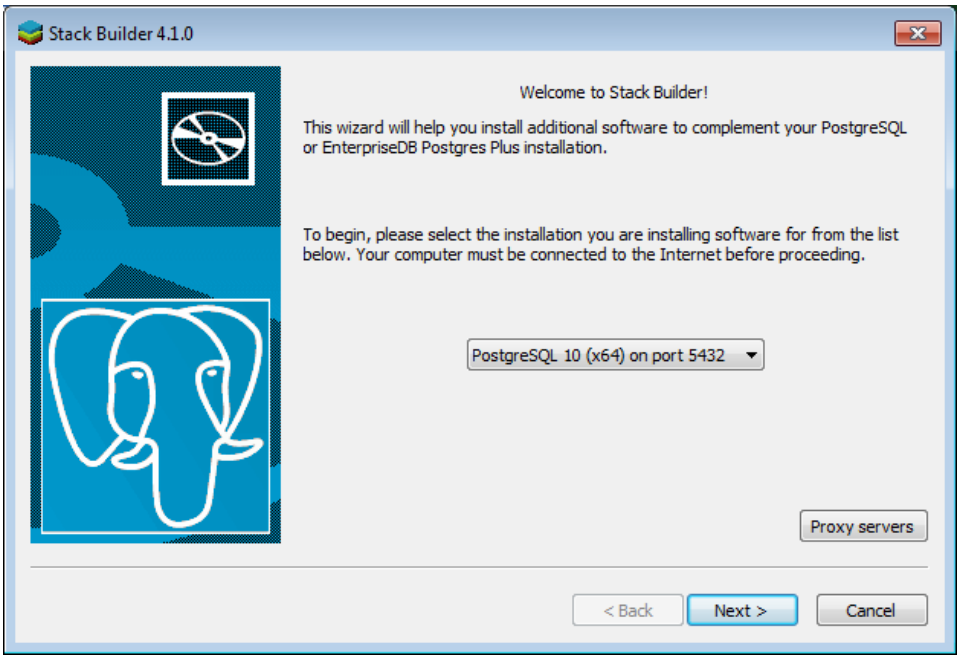
Click the “Next” button. It will take about 5 minutes to install.



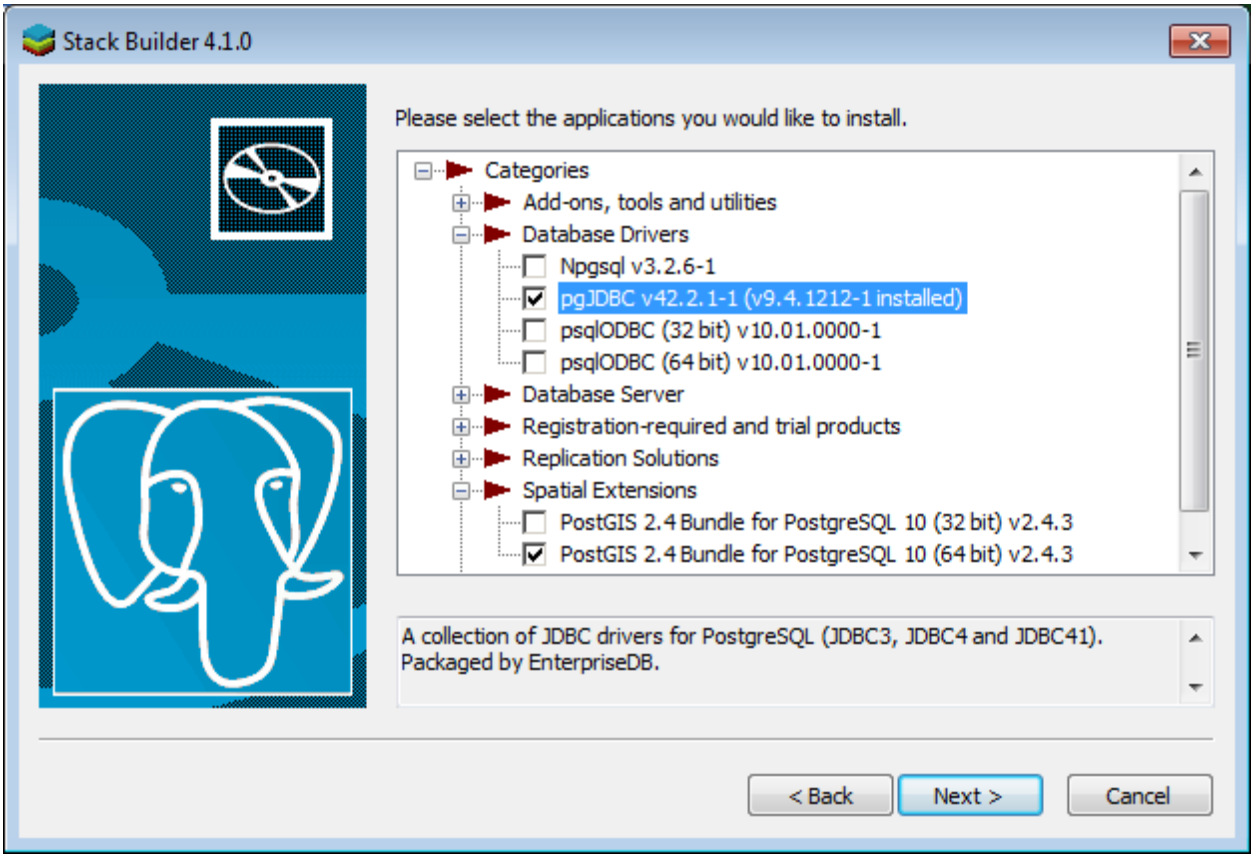
This will take several minutes to complete.



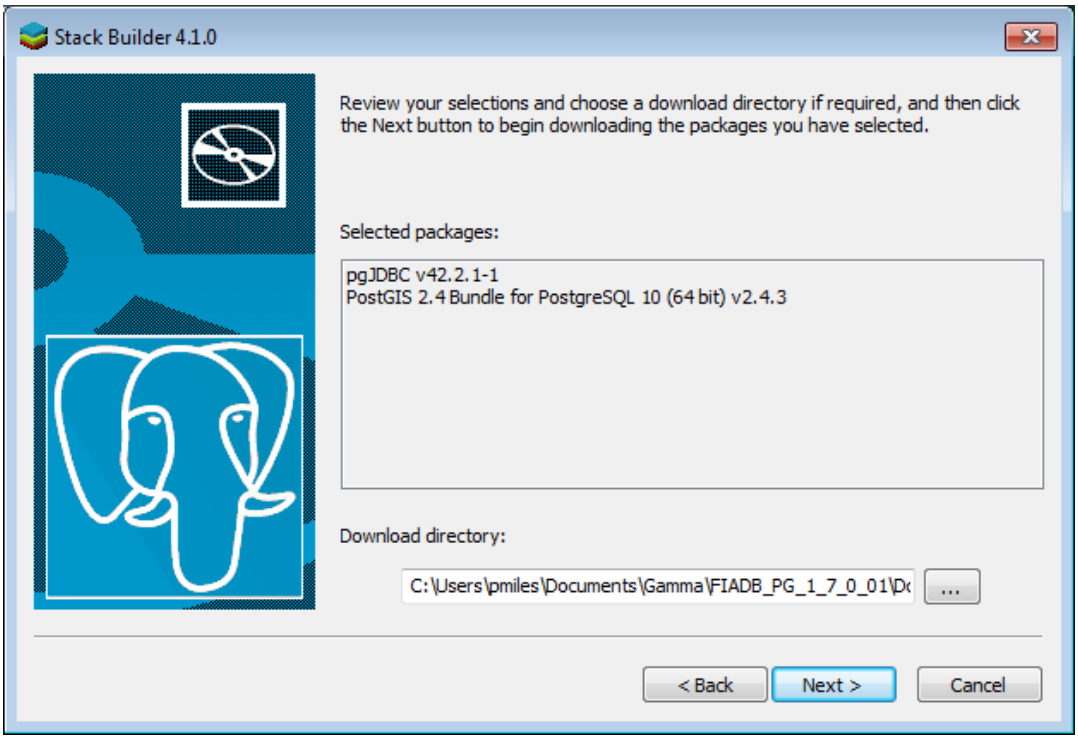
Click the “Finish” button.



Click on the next button.

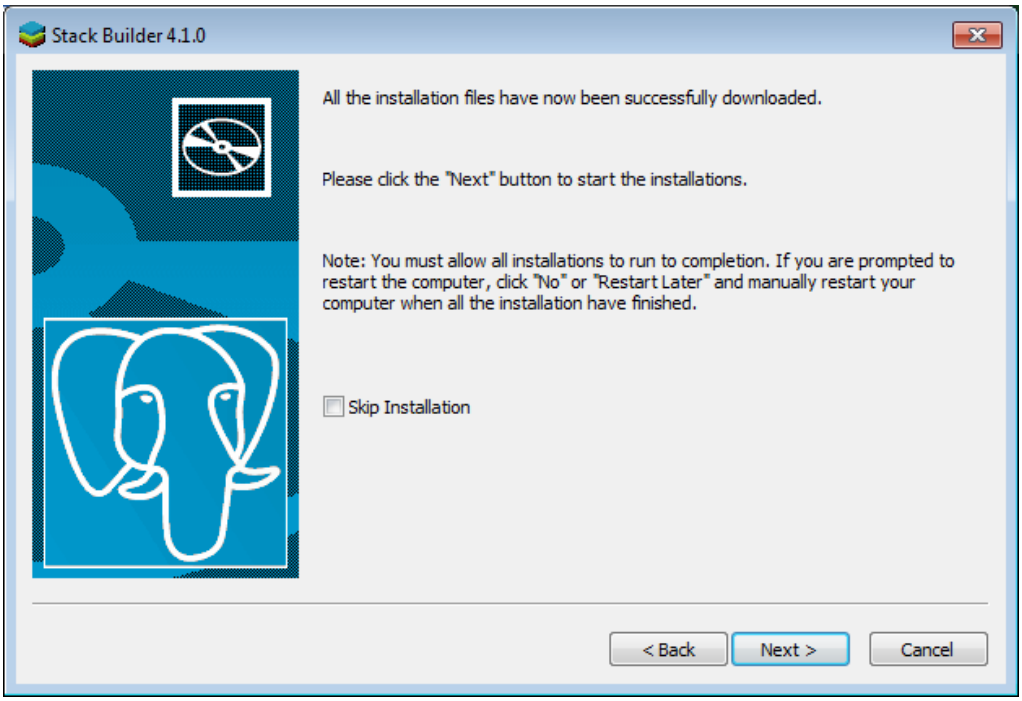


Add the pgJDBC driver and PostGIS and click next button.

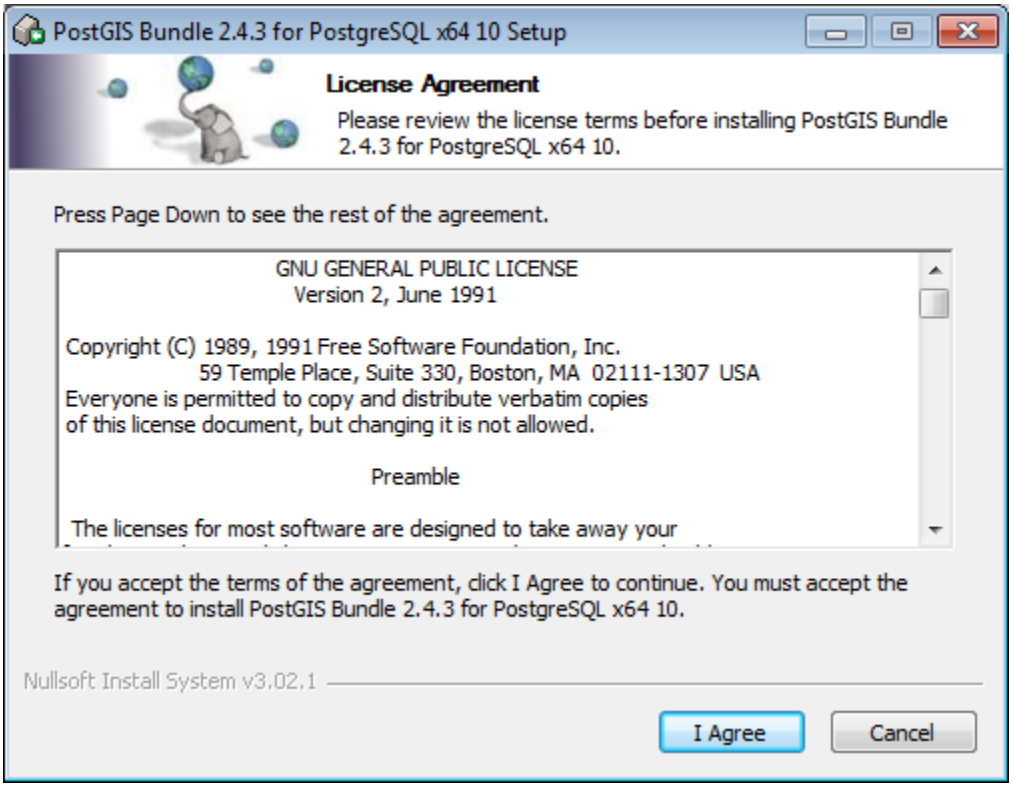


Download directory: …\Documents\Gamma\FIADB_PG_1_7_0_01\Downloads.

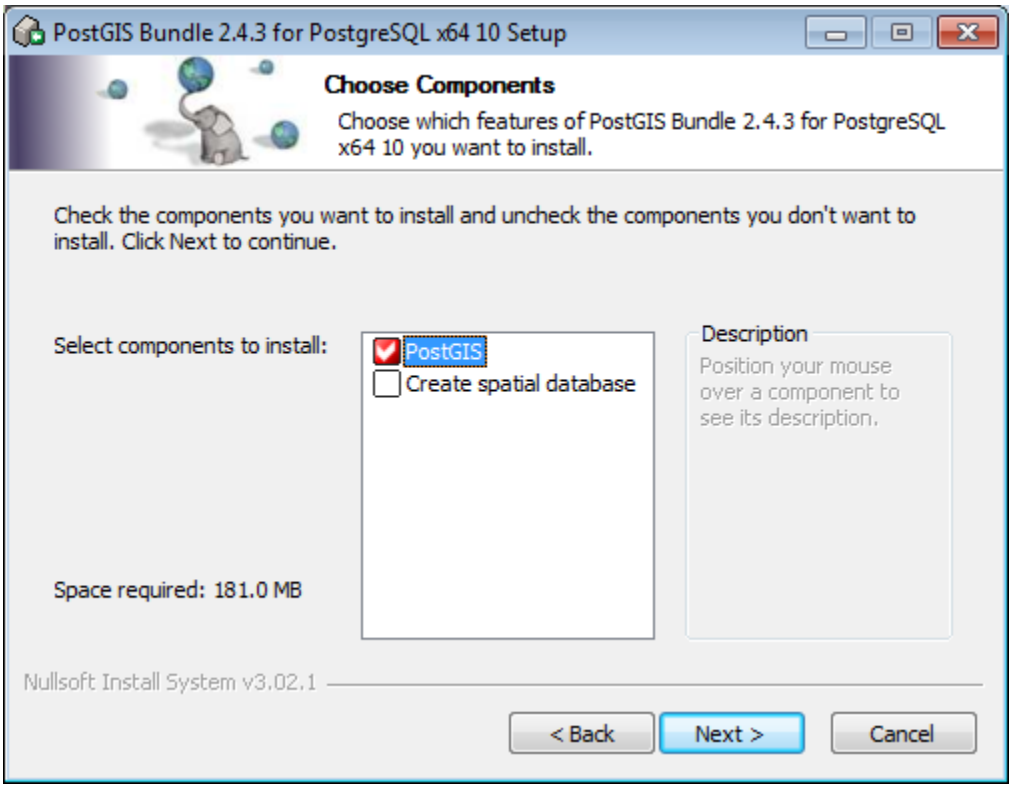
“Next” button.



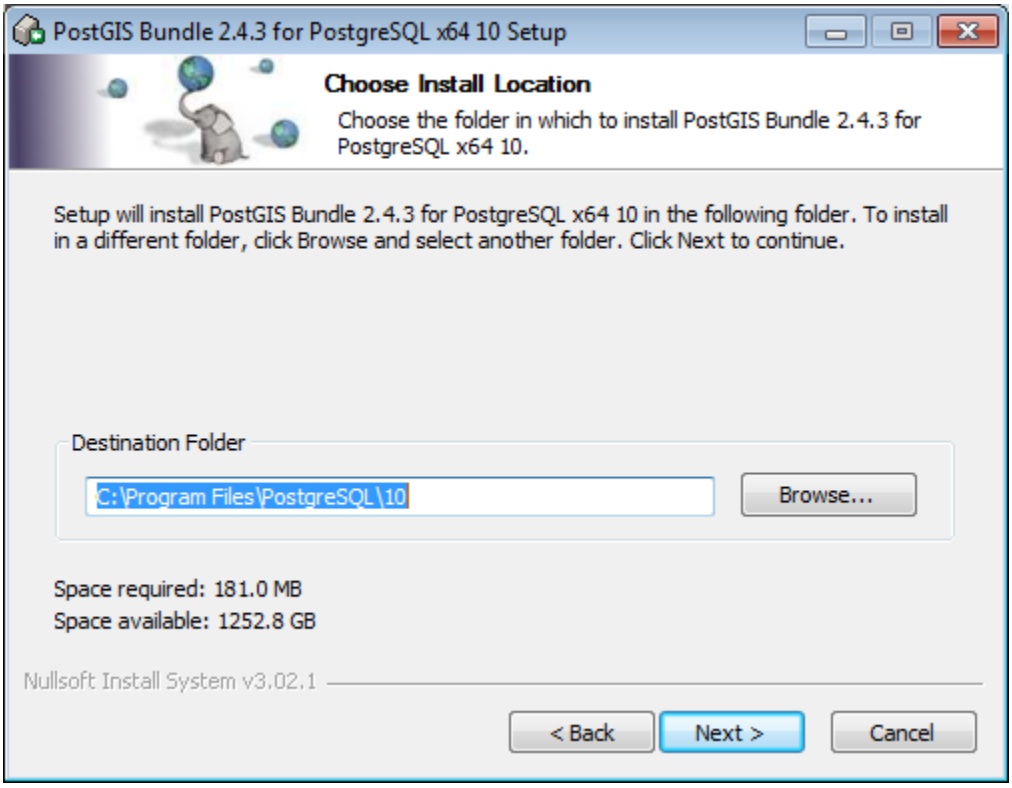
Click the next button.



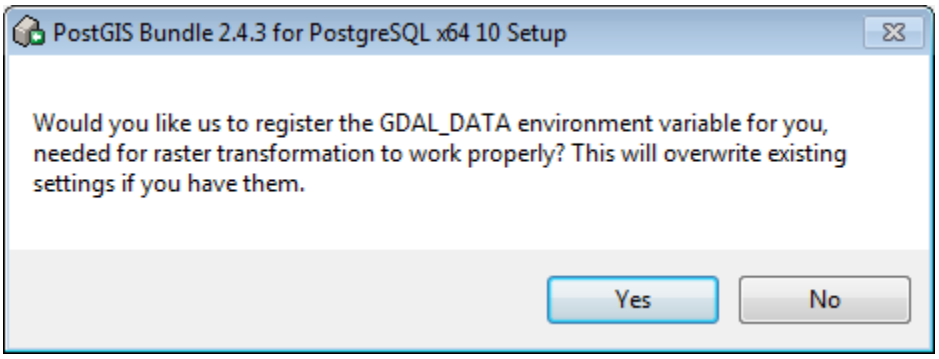
Click “I Agree”.


PostGIS Bundle 2.4.3 for PostgreSQL x64 10 Setup
Choose Components
Choose which features of PostGIS Bundle 2.4.3 for PostgreSQL x64 10 you want to install.
Check the components you want to install and uncheck the components you don't want to install. Click Next to continue.
Select components to install:
PostGIS
Create spatial database
Description
Position your mouse over a component to see its description.
Space required: 181.0 MB
Nullsoft Install System v3.02.1
< Back
Next >
Cancel

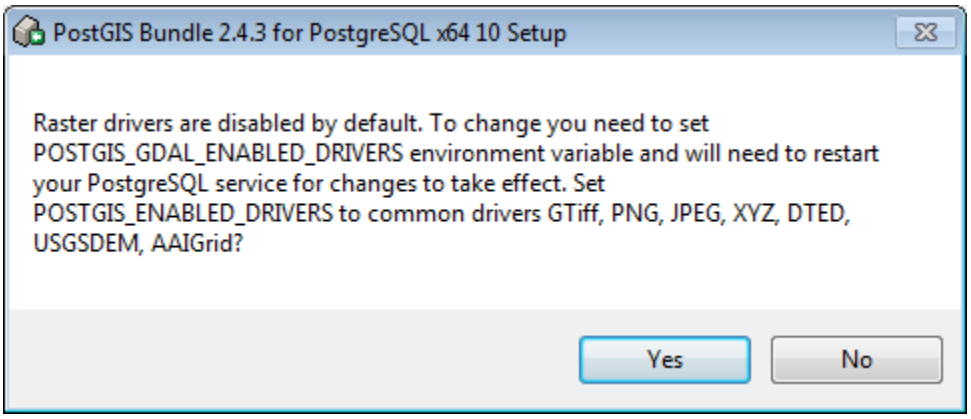
Click “Next”


PostGIS Bundle 2.4.3 for PostgreSQL x64 10 Setup
Choose Install Location
Choose the folder in which to install PostGIS Bundle 2.4.3 for PostgreSQL x64 10.
Setup will install PostGIS Bundle 2.4.3 for PostgreSQL x64 10 in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.
Destination Folder
C:\Program Files\PostgreSQL\10
Browse...
Space required: 181.0 MB
Space available: 1252.8 GB
Nullsoft Install System v3.02.1
< Back
Next >
Cancel

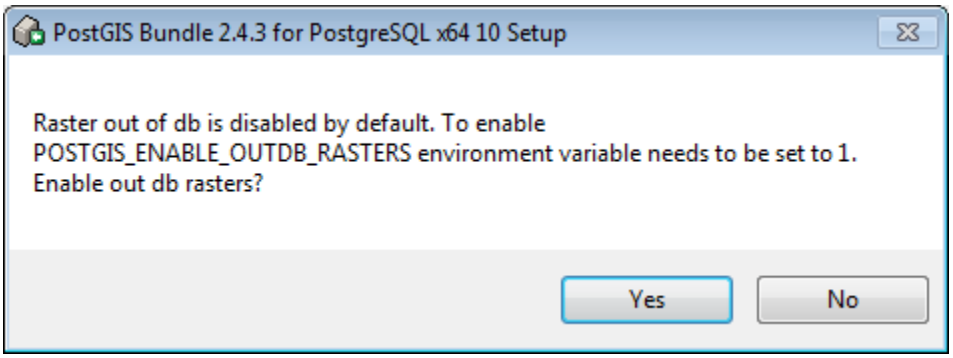
Select a destination folder and click “Next”.



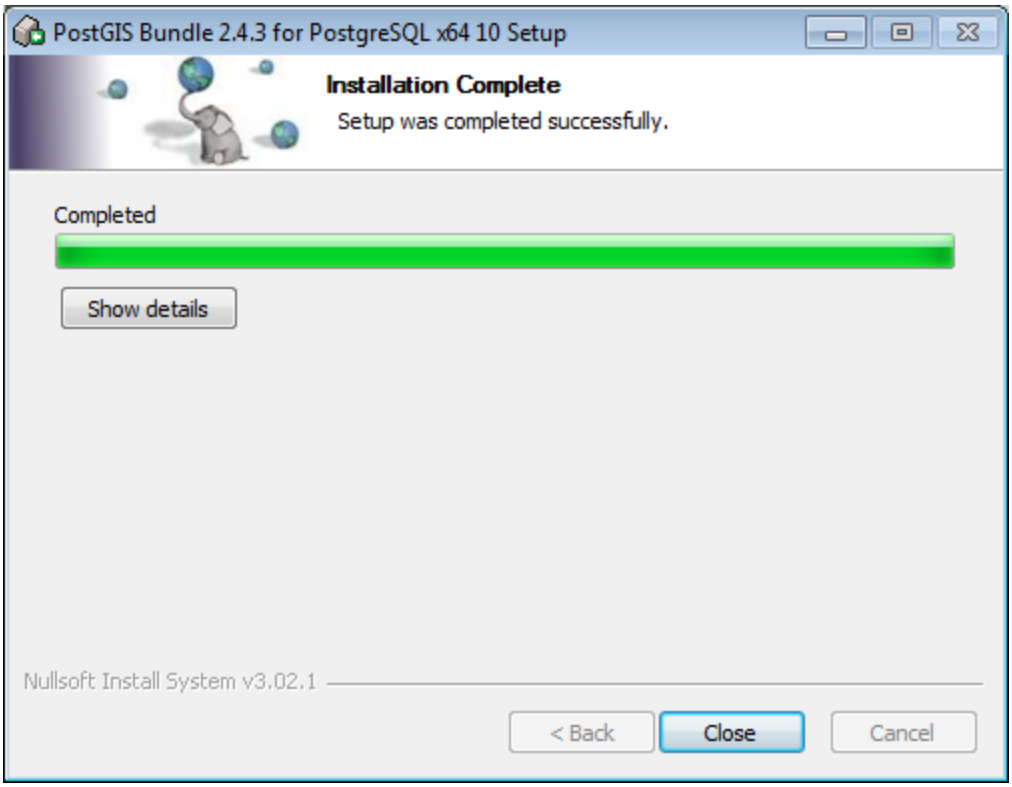
Click “Yes”.



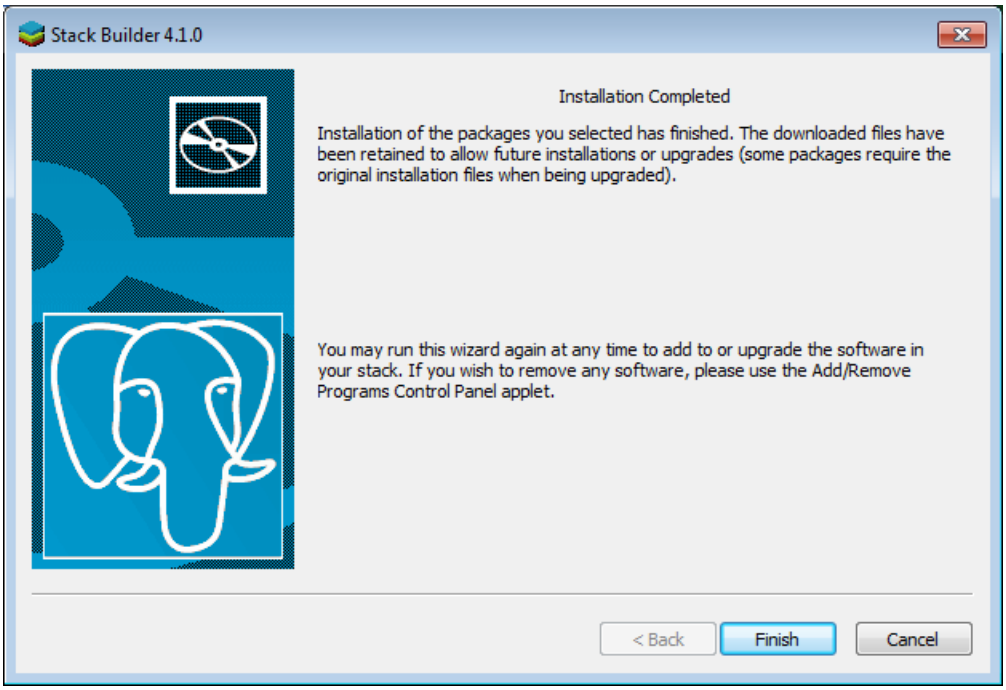
Click “Yes”.



Click “Yes”.



Click “Close”.



Click “Finish”.

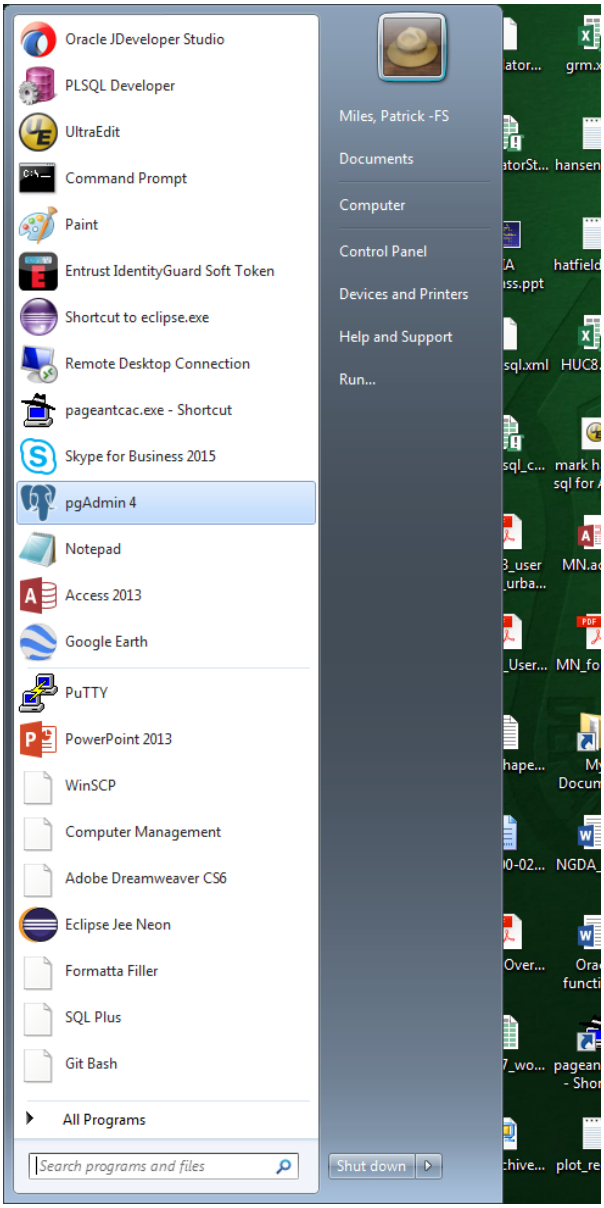
Chapter 2: Creating FIADB tables and loading data into those tables and adding functions

Steps to bypass having to supply password when running PgAdmin4.

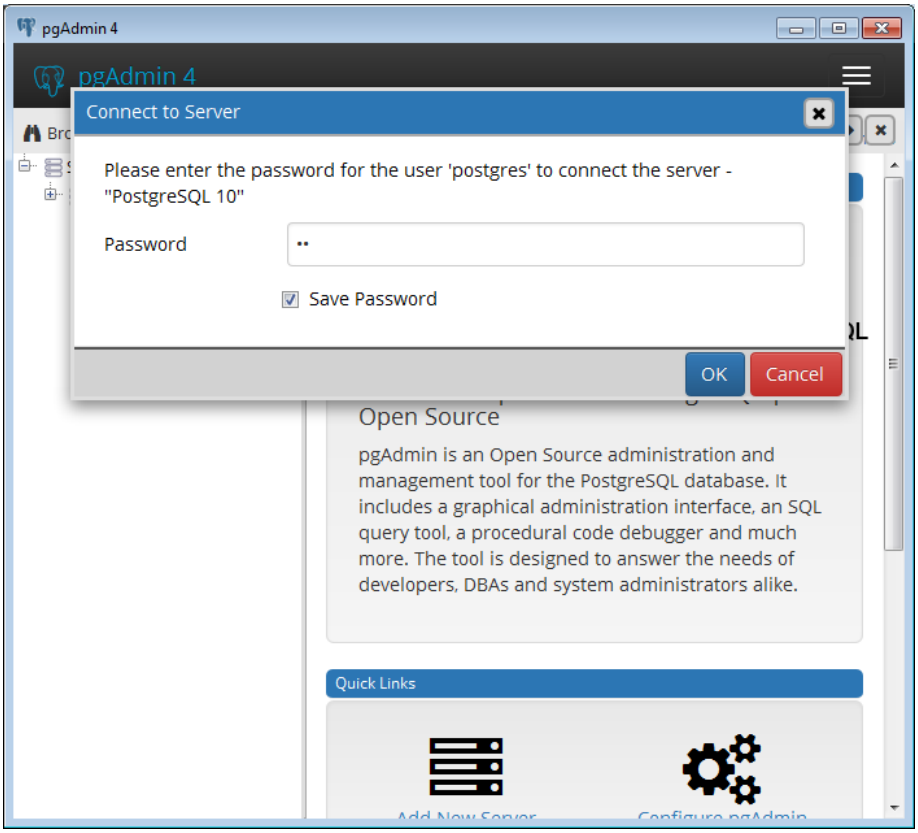
1) Create the folder C:\Users\YOUR_SHORT_NAME\AppData\Roaming\postgresql
2) Create file C:\Users\YOUR_SHORT_NAME\AppData\Roaming\postgresql\pgpass.conf (using a text editor such as Notepad) and add the following single line to the file:
   localhost:5432:*:postgres:pw

Now you will never have to supply the password again.

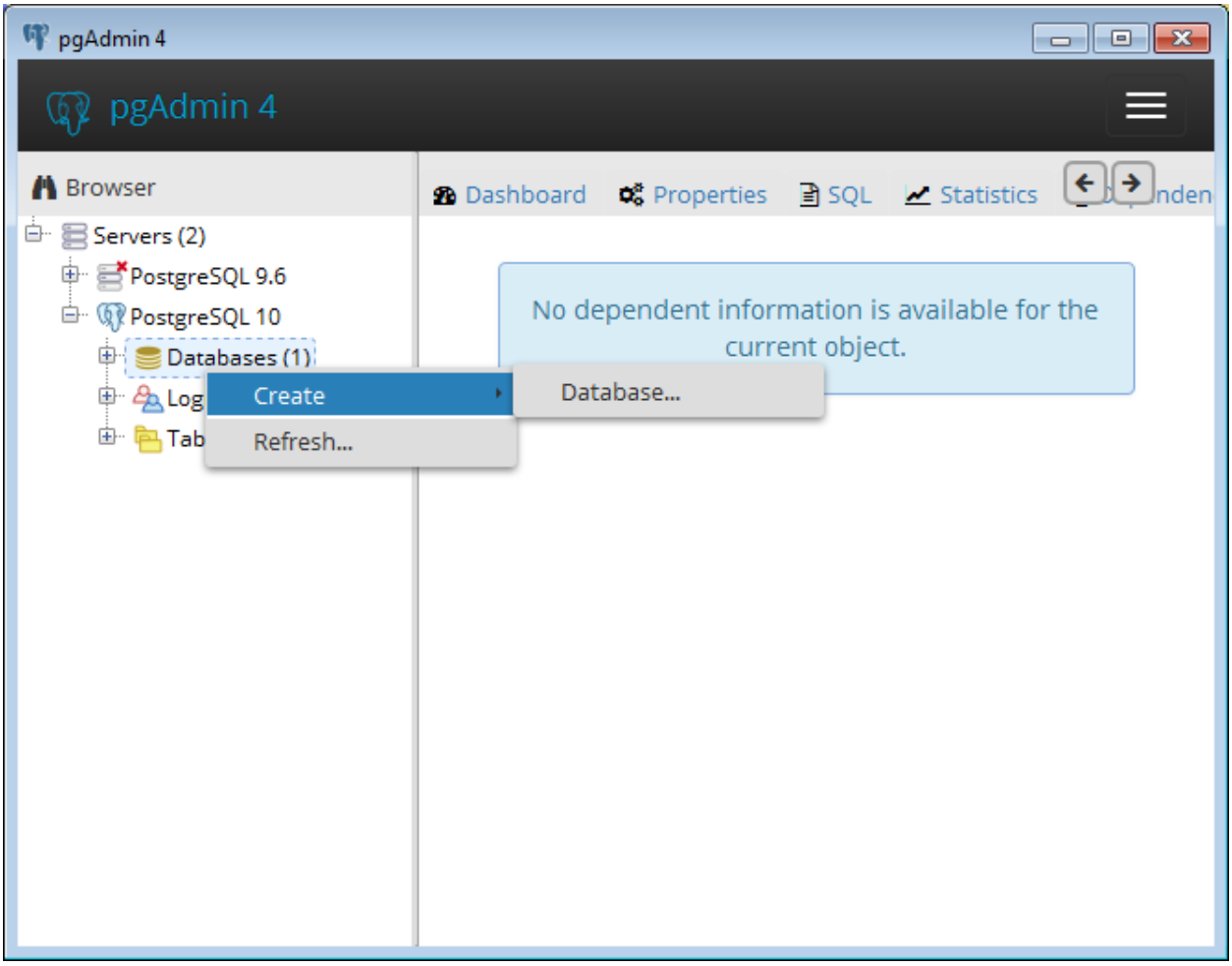
At this point you should be able to run the PgAdmin4 program. You can either click on the elephant head icon (see below) or execute this file "C:\Program Files\PostgreSQL\10\pgAdmin 4\bin\pgAdmin4.exe".


Oracle JDeveloper Studio
PLSQL Developer
UltraEdit
Command Prompt
Paint
Entrust IdentityGuard Soft Token
Shortcut to eclipse.exe
Remote Desktop Connection
pageantcac.exe - Shortcut
Skype for Business 2015
pgAdmin 4
Notepad
Access 2013
Google Earth
PuTTY
PowerPoint 2013
WinSCP
Computer Management
Adobe Dreamweaver CS6
Eclipse Jee Neon
Formatta Filler
SQL Plus
Git Bash
All Programs
Search programs and files
Miles, Patrick -FS
Documents
Computer
Control Panel
Devices and Printers
Help and Support
Run...
Shut down

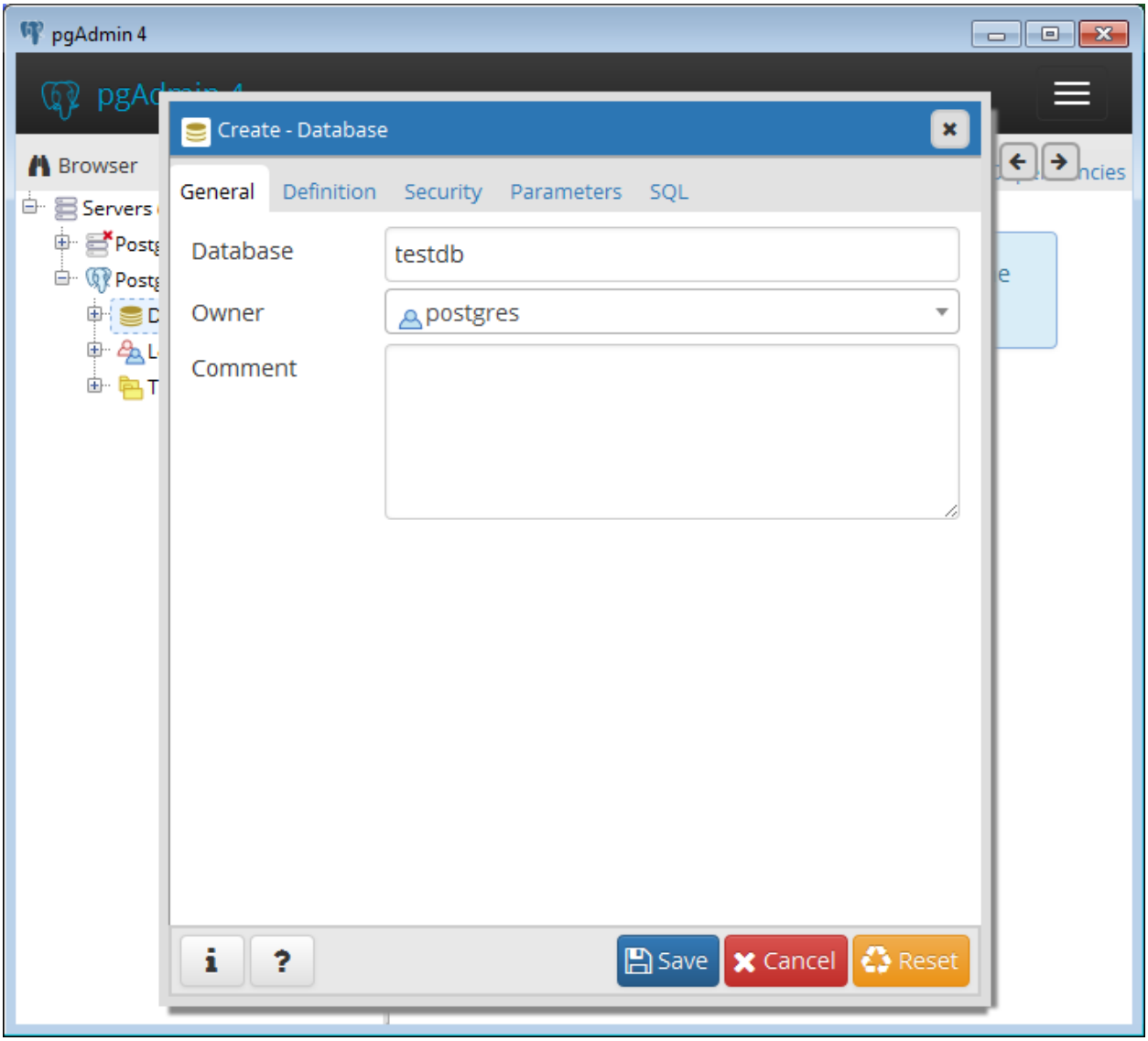
Click on Servers(1) expansion button to see list of servers
Click on PostgreSQL 10 expansion button.



Enter “pw” for the password, check “Save Password”, and click “OK”.

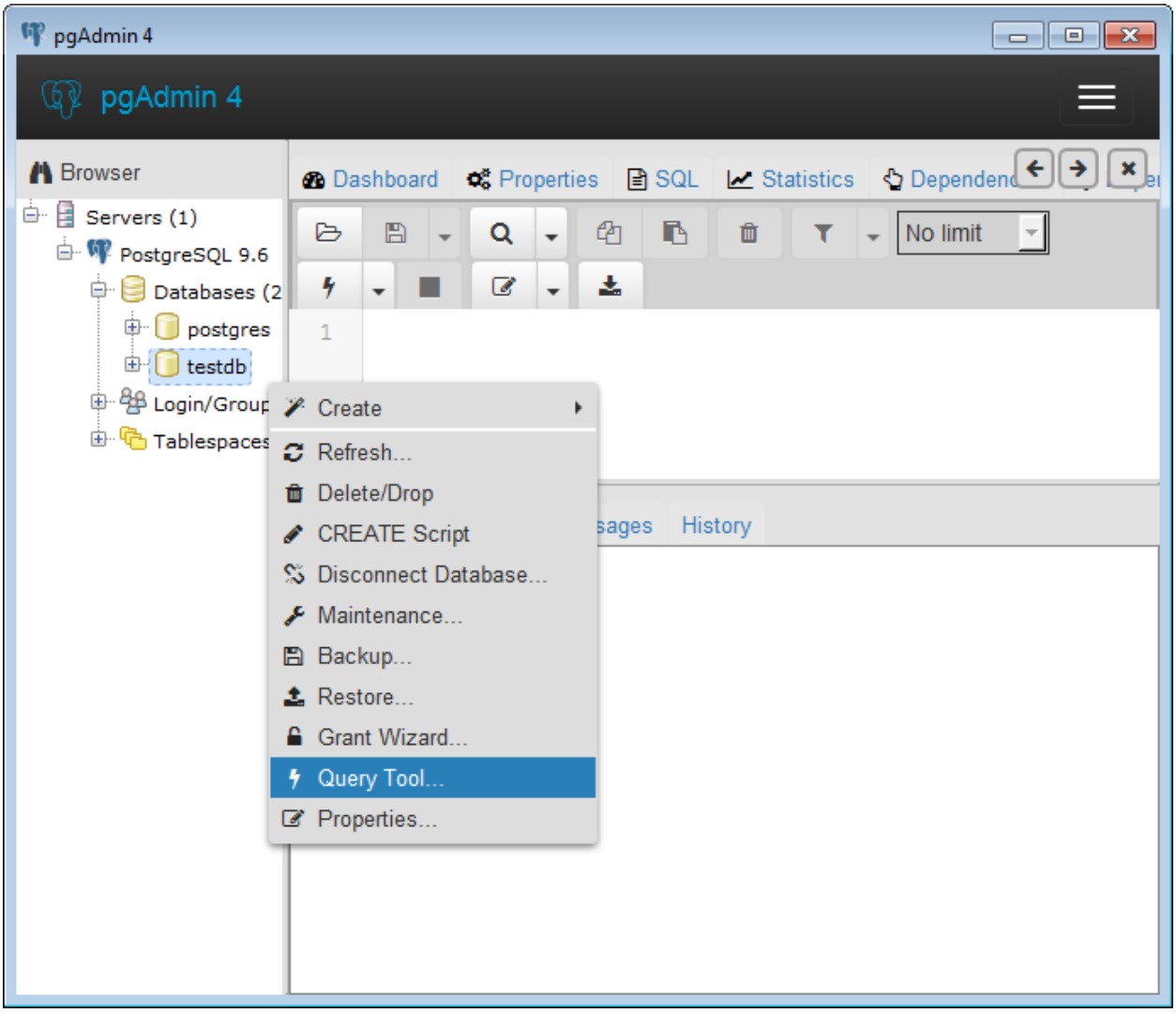


Create a database by right-clicking on “Database”/”Create”/”Database”.

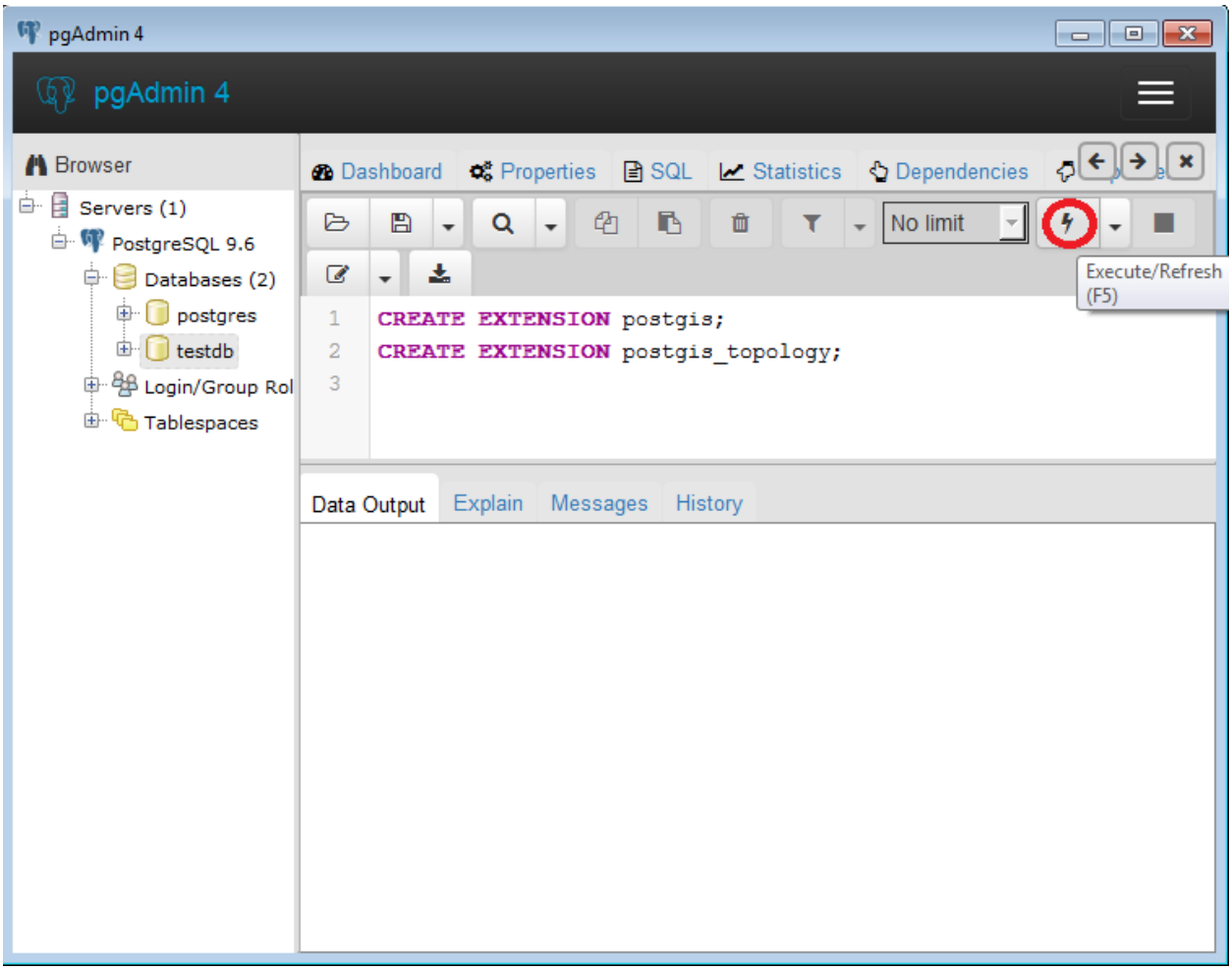


Name the database “testdb” and then click Save.

Before you quit pgadmin4 right click on “testdb” database and select the “Query tool”.



Enter the following 2 lines and then click on the lightning bolt icon (circled in red in figure below):
CREATE EXTENSION postgis;
CREATE EXTENSION postgis_topology;
This will allow you to include PostGIS functions in your SQL commands.



Creating FIADB tables in Postgres database testdb

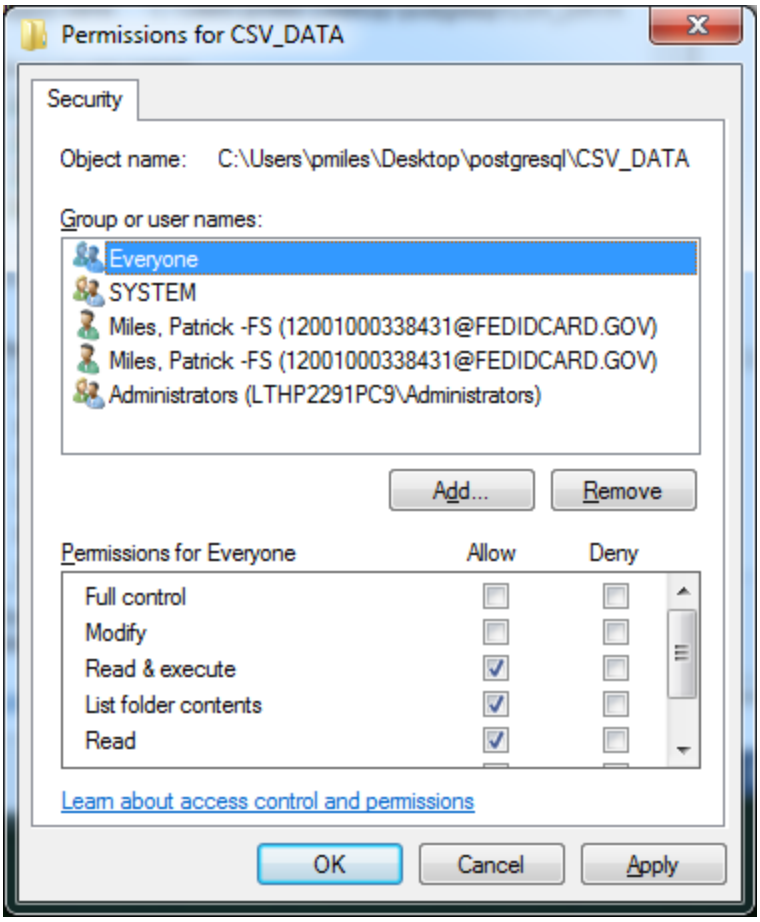
Go into folder FIADB_PG\BatchScripts and double-click on file “createTables.bat”. Any error messages should be in the file FIADB_PG\Logfiles\log_createTables.txt. This will drop the schema “fs_fiadb”, then create the schema “fs_fiadb” and all of the tables.

Loading FIADB data into Postgres database testdb

Before you begin loading data you **MUST** give permission to “Everyone” to read from folders

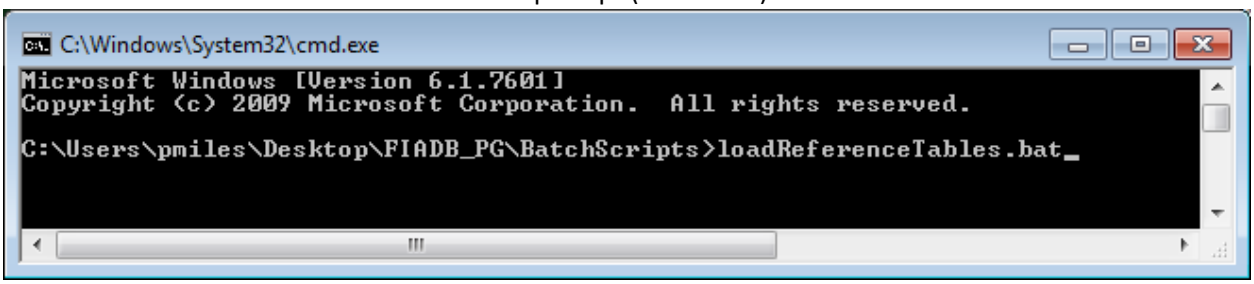
1) CSV_DATA
2) CSV_PERM
3) evalidatorFunctions

Right-click on the CSV_DATA folder and click on “Properties. Click on the “Security” tab. Click on the “Edit” button. Click on the “Add…” button. In the text box where it says “Enter the object names to select” type in “Everyone” and then click on the “OK” button. When you are done “Everyone” should appear in the list of “Group or user names” (see below).
Repeat these steps for the CSV_PERM AND evalidatorFunctions folders.



Loading the reference tables and evalidator functions

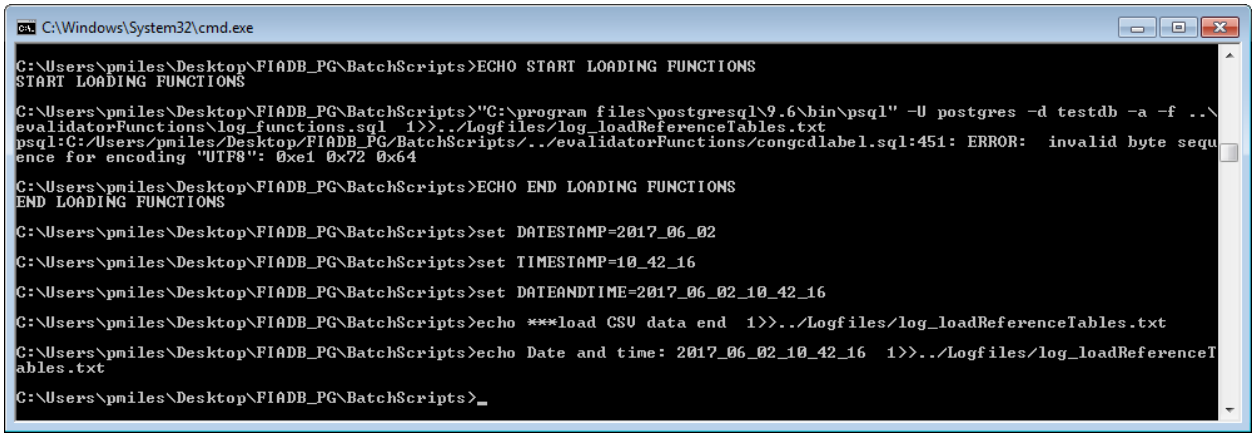
1) Go to https://apps.fs.usda.gov/fia/datamart/CSV/datamart_csv.html and click on this link All of the reference files zipped together to download the zip file that contains the reference tables.
2) Use Winzip to extract the files in "FIADB_REFERENCE.zip" to the folder FIADB_PG\CSV_DATA.
3) Open a command prompt and navigate to the folder …\FIADB_PG\BatchScripts (use the change directory command "cd" to navigate to the appropriate folder). Then type "loadReferenceTables.bat" at the command prompt (see below).



4) Click the "Enter" key on your keyboard and then review the output in the command window. Note that, In the command window presented below, the congcdlabel function did not load correctly. The Postgres copy command had difficulty loading names with accent marks. The contents of the file "..\FIADB_PG\evalidatorFunctions\ congcdlabel.sql" must be copied into the

pgAdmin Query Tool and then executed in order to load the congcdlabel function. Any other error messages will be in the file FIADB_PG\Logfiles\ log_loadReferenceTables.txt.

5)



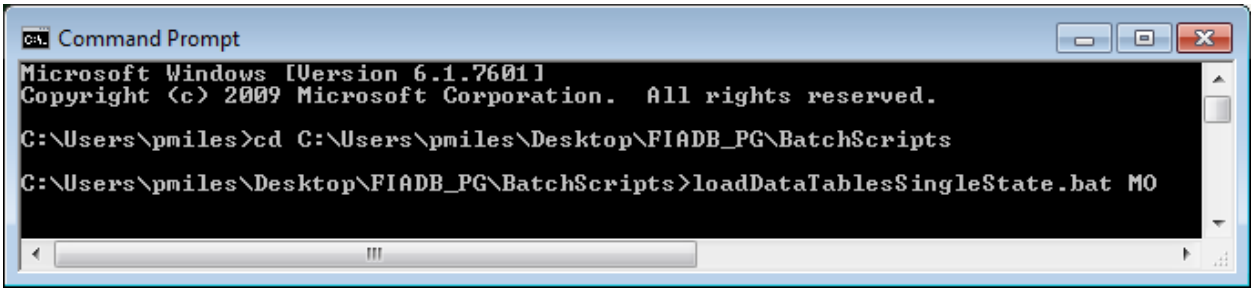
Loading FIADB data to the database

Option 1) Loading all of the States and U.S. Territories (this may take a couple of days)

1) Go to https://apps.fs.usda.gov/fia/datamart/CSV/datamart_csv.html and click on this link ENTIRE.zip (several gigabytes - may take several hours to download)
2) Use Winzip to extract the files in "ENTIRE.zip" to the folder FIADB_PG\CSV_DATA.
3) Go into the folder FIADB_PG\BatchScripts and Double-click on the file "loadDataTablesEntire.bat".

Option 2) Loading one state at a time (should take 20 minutes or less)

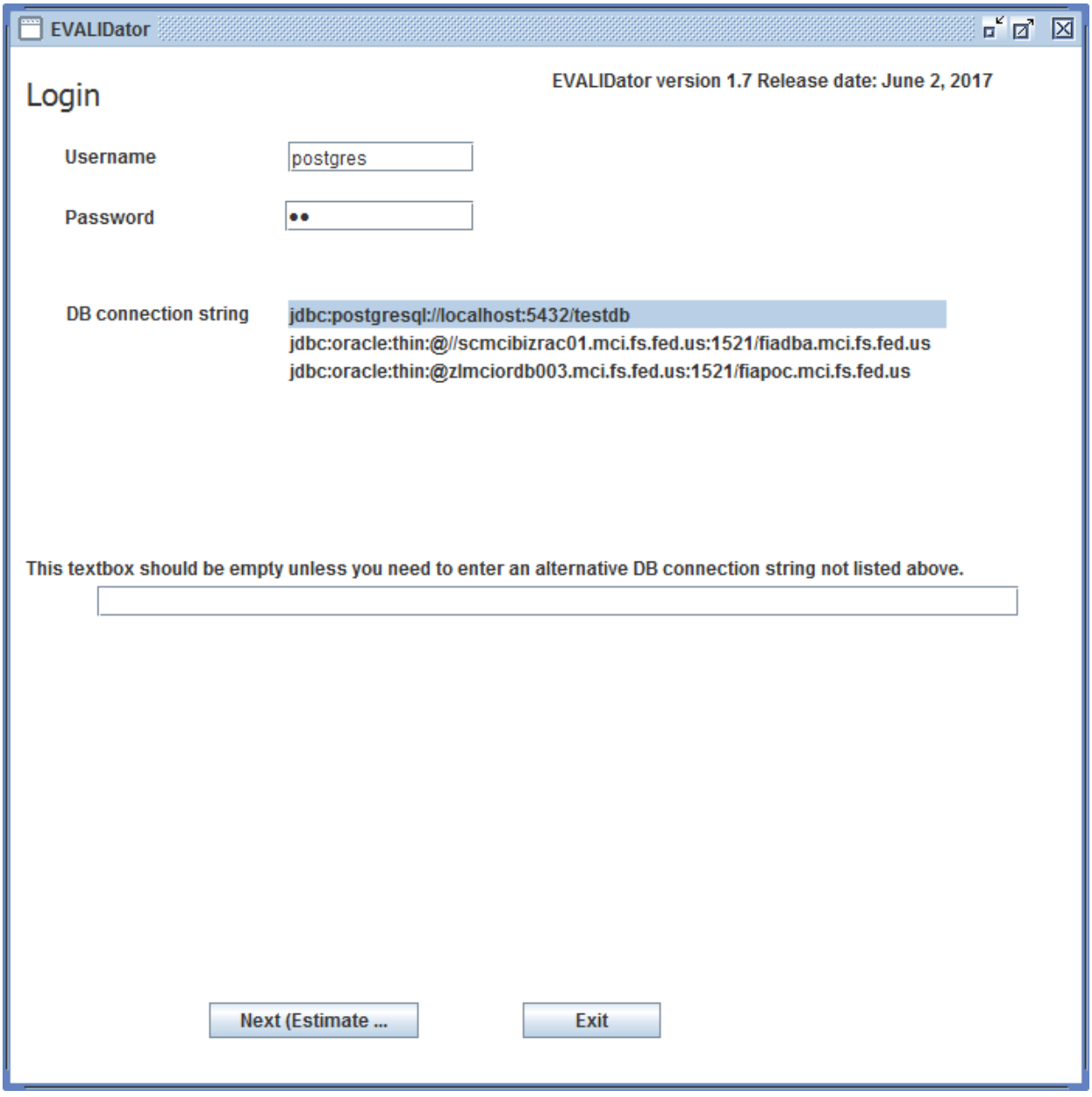
1) Go to https://apps.fs.usda.gov/fia/datamart/CSV/datamart_csv.html and click on the State you would like to download.
2) Use Winzip to extract the State's CSV files into the folder FIADB_PG\CSV_DATA. All of the files should be prefixed by "XX_" where XX is the State's 2 character abbreviation.
3) Open a command prompt and navigate to the folder …\FIADB_PG\BatchScripts (use the change directory command "cd" to navigate to the appropriate folder). Then type "loadDataTablesSingleState.bat XX" (where XX is the two character State abbreviation) at the command prompt. For example, if you had download and extracted comma-delimited data for Missouri (State abbreviation equals "MO"), you would enter "loadDataTablesSingleState.bat MO" (see below).



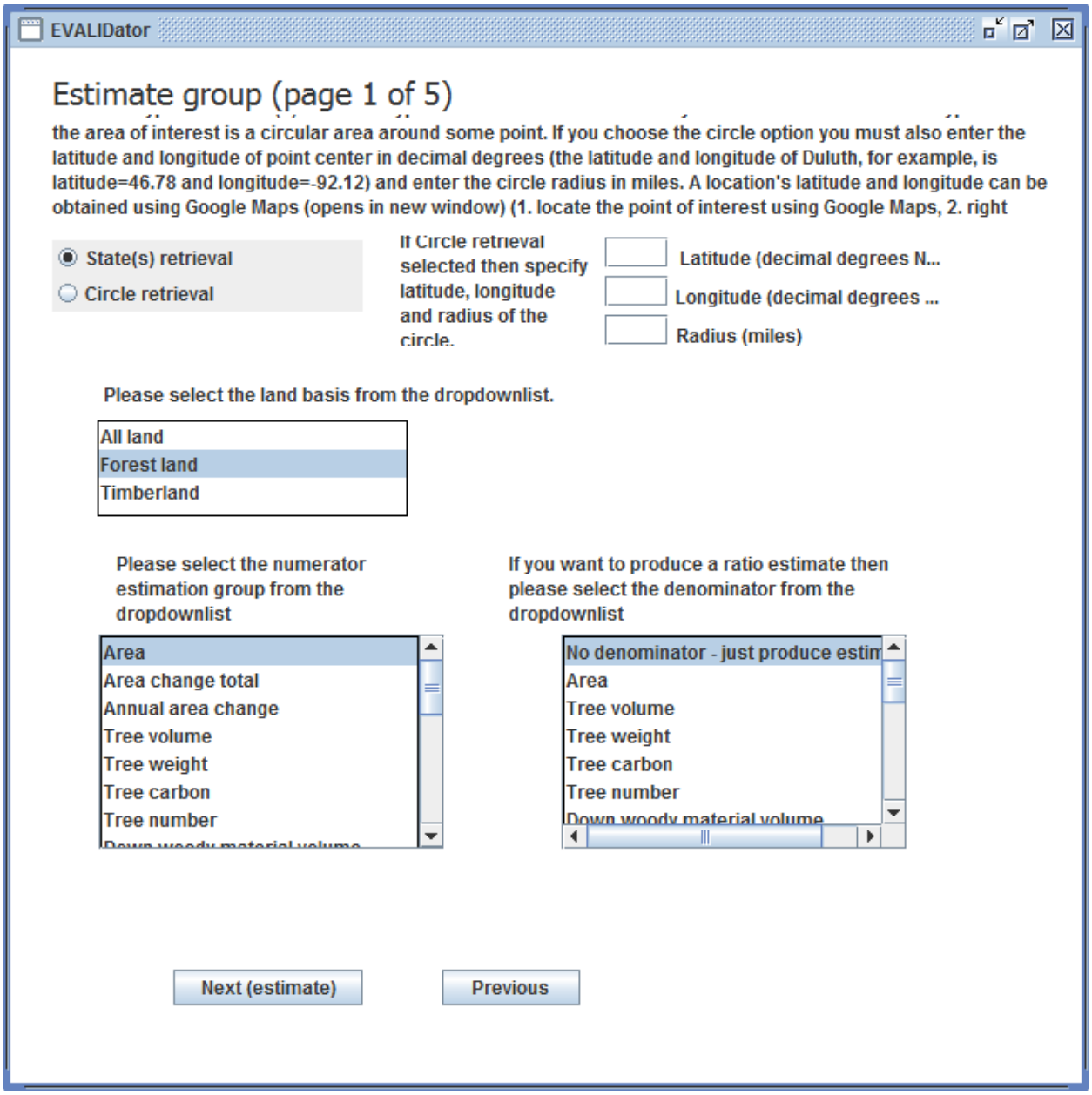
Now you can run the desktop EVALIDator using the Postgres database you just created or you can run the SQL examples in …\FIADB_PG\Instructions\fiadb_examples_postgres_sql.pdf from within the pgAdmin Query Tool.

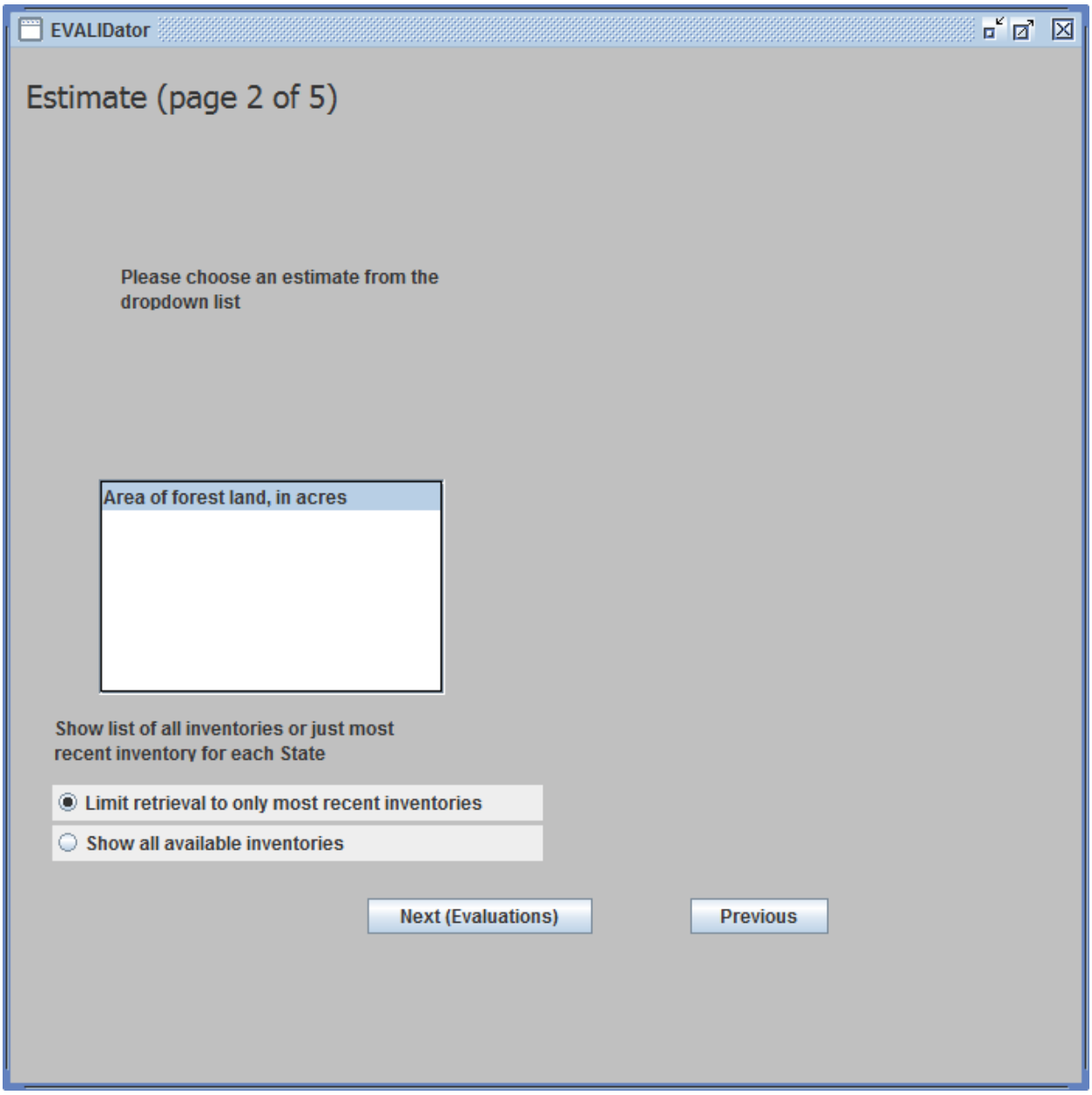
Chapter 3: Running the Desktop Evalidator version 1.7.0.00

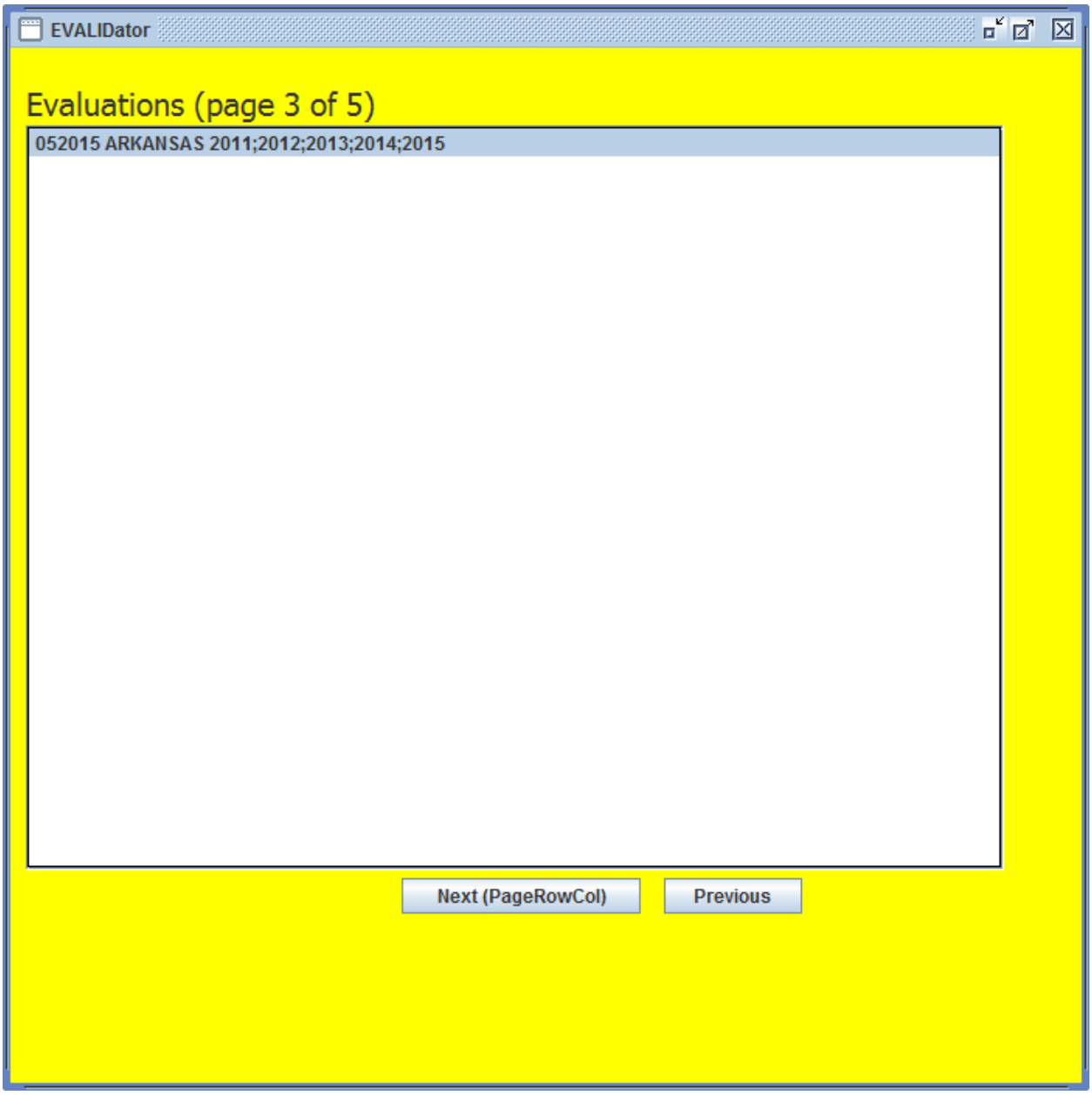
Go into the FIADB_PG folder and double-click on the “Evalidator.bat” file. The following window will appear. You could have also simply double-clicked on the “evalidator.jar” file but more memory is allocated for the program if you double-click on the “Evalidator.bat” file.



Pick the highlighted database connection string to connect to your new Postgres database and enter “pw” for the password. Then click “Next(Estimate…”.

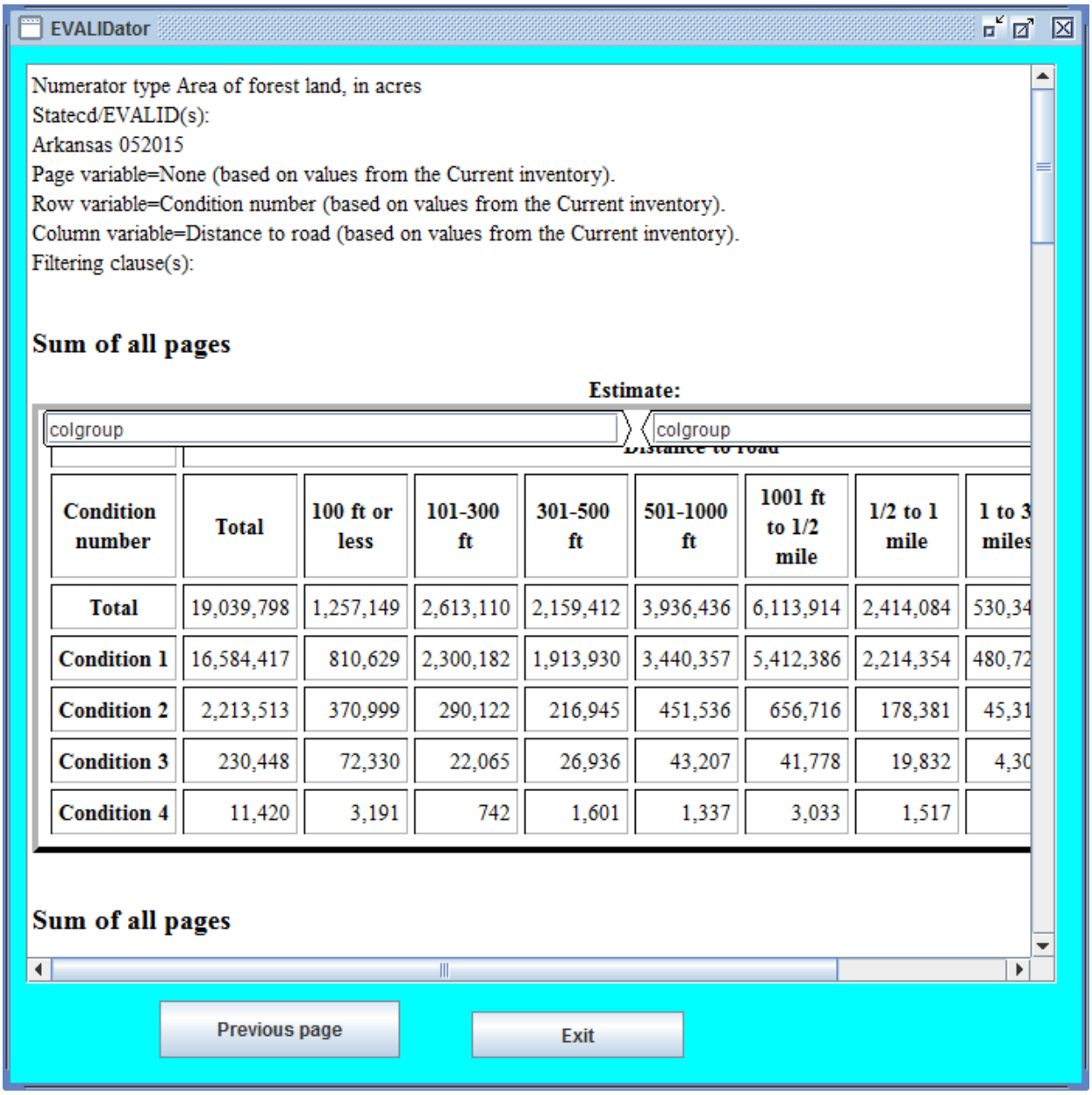

EVALIDator
Estimate group (page 1 of 5)
the area of interest is a circular area around some point. If you choose the circle option you must also enter the latitude and longitude of point center in decimal degrees (the latitude and longitude of Duluth, for example, is latitude=46.78 and longitude=-92.12) and enter the circle radius in miles. A location's latitude and longitude can be obtained using Google Maps (opens in new window) (1. locate the point of interest using Google Maps, 2. right
State(s) retrieval
Circle retrieval
If Circle retrieval selected then specify latitude, longitude and radius of the circle.
Latitude (decimal degrees N...
Longitude (decimal degrees ...
Radius (miles)
Please select the land basis from the dropdownlist.
All land
Forest land
Timberland
Please select the numerator estimation group from the dropdownlist
Area
Area change total
Annual area change
Tree volume
Tree weight
Tree carbon
Tree number
If you want to produce a ratio estimate then please select the denominator from the dropdownlist
No denominator - just produce estim
Area
Tree volume
Tree weight
Tree carbon
Tree number
Down woody material volume
Next (estimate)
Previous


EVALIDator
Estimate (page 2 of 5)
Please choose an estimate from the dropdown list
Area of forest land, in acres
Show list of all inventories or just most recent inventory for each State
Limit retrieval to only most recent inventories
Show all available inventories
Next (Evaluations)
Previous


EVALIDator
Evaluations (page 3 of 5)
052015 ARKANSAS 2011;2012;2013;2014;2015
Next (PageRowCol)
Previous

Note: you could have limited the retrieval to forest land within 300 miles of Columbia, Missouri, by adding the following line to the filtering textbox:

```
and ST_Distance(ST_GeogFromText('SRID=4269;POINT(-92.332448 38.944535)'),
                ST_GeogFromText('SRID=4269;POINT(' ||
     to_char(plot.lon, '9999.9999999') || ' ' ||
     to_char(plot.lat, '9999.9999999') || ')' || '''||')) < 1609.344 * 300
```


EVALIDator
Numerator type Area of forest land, in acres
Statecd/EVALID(s):
Arkansas 052015
Page variable=None (based on values from the Current inventory).
Row variable=Condition number (based on values from the Current inventory).
Column variable=Distance to road (based on values from the Current inventory).
Filtering clause(s):
Sum of all pages
Estimate:
colgroup
colgroup
Condition number
Total
100 ft or less
101-300 ft
301-500 ft
501-1000 ft
1001 ft to 1/2 mile
1/2 to 1 mile
1 to 3 miles
Total 19,039,798 1,257,149 2,613,110 2,159,412 3,936,436 6,113,914 2,414,084 530,34
Condition 1 16,584,417 810,629 2,300,182 1,913,930 3,440,357 5,412,386 2,214,354 480,72
Condition 2 2,213,513 370,999 290,122 216,945 451,536 656,716 178,381 45,31
Condition 3 230,448 72,330 22,065 26,936 43,207 41,778 19,832 4,30
Condition 4 11,420 3,191 742 1,601 1,337 3,033 1,517
Sum of all pages
Previous page
Exit

Chapter 4: Uninstalling PostgreSQL

Simple method

a. In Windows Explorer go to folder C:\Program Files\PostgreSQL\10
    i. Non-Forest Service computers:
        1. double-click on “uninstall-postgis-bundle-pg10x64-2.3.2-1.exe”.
        2. double-click on “uninstall-postgresql.exe”.
    ii. Forest Service computers:
        1. right-click on uninstall-postgis-bundle-pg10x64-2.3.2-1.exe and then click on “Run elevated” and type in “Research” as the justification.
        2. right-click on “uninstall-postgresql.exe and then click on “Run elevated” and type in “Research” as the justification.
b. In Windows Explorer go to folder “C:\Program Files” and delete folder “PostgreSQL”.
c. RESTART COMPUTER

End